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09/850,320	05/07/2001	Marek Stephen Piekarski	068232.000003	1705

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James E Bradley  
Bracewell & Patterson LLP  
P O Box 61389  
Houston, TX 77208-1389

EXAMINER

LEVITAN, DMITRY

ART UNIT PAPER NUMBER

2662

DATE MAILED: 05/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/850,320

Applicant(s)

PIEKARSKI ET AL.

Examiner

Dmitry Levitan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2001.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-5 and 7-11 is/are rejected.  
7) ☒ Claim(s) 6 and 12 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 07 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☒ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5/07/01, 01/17/02.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

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***Oath/Declaration***

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not identify the city and either state or foreign country of residence of each inventor.

The residence information may be provided on either on an application data sheet or supplemental oath or declaration.

***Specification***

2. The disclosure is objected to, because abbreviations or acronyms CSIX and IXBus are cited throughout the specification without explanation. Applicant should provide a full explanation for the acronyms at least at their first occurrence in the specification.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 5, 7, 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isoyama (US 6,570,873) in view of Han (US 6,009,097), Miles (US 6,665,495) and Cloonan (US 5,537,403).

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5. Regarding claims 1 and 7, Isoyama substantially teaches the limitations of the claims: A data switching system and method (packet switch or a cell switch 3:1 shown on Fig. 1 and 4:19-42) having a plurality of virtual output queue ingress ports (input ports 1 on Fig. 1 and 2, utilizing virtual output queue method 1:61-67), a plurality of egress ports (output ports 4 on Fig. 1), a control unit (scheduler 2 on Fig. 1) and switching matrix for interconnecting selected ingress ports and egress ports (inherently part of switch 3 interconnecting input and output ports as shown on Fig. 1, because all cell switches have switching matrix/fabric),

The ingress ports being arranged to receive data traffic segregated into equal size cells having a header (inherently part of the system, because Isoyama teaches a cell/ATM switch 3:1 and all ATM cells have equal sizes and comprise headers) including an egress port output path address, to route the cells into virtual output queues in the ingress port in accordance with the egress port output path address (queues 12 on Fig. 1, provided for each output port 5:26-29, using inherent output ports path addresses, because the output port path addresses are essential for the cells segregation in the queues 12, formed for each output port) and to generate connection requests for transmission to the control unit (connection request on Fig. 1 and 5:43-52),

The control unit being arranged to arbitrate among the connection requests and control the switching matrix to schedule connections across the switch (scheduler 2 on Fig. 1 arbitrating the requests and setting the switch 3 in accordance with allocation 5:52-60 by sending GRANT signal).

Isoyama also teaches assigning priority to real time STM telephone traffic 8:20-25.

Isoyama does not teach input and output ports as input and output routers, providing a separate queue in each ingress router for TDM traffic cells and the control unit includes a TDM connection unit arranged to override the normal arbitration procedure for each TDM frame and to provide the switch connections for TDM cells, and the switching matrix as memory-less.

Han teaches utilizing input and output routers instead of input and output ports in a switch system (routers 42-48 on Fig. 4 and 5 and 5:65-6:4).

Miles teaches providing a separate queue in each ingress router for TDM traffic cells (TDM queues 104 on Fig. 13 and 20:3-59 in each of ingress unit 60 on Fig. 4, wherein the packets containing TDM data are assigned to TDM queues each intended for each egress unit, and non-TDM packets are assigned to PKT queues) and the control unit includes a TDM connection unit arranged to override the normal arbitration procedure for each TDM frame and to provide the switch connections for TDM cells (packet schedule 48 and congestion management 46 of core controller 40 on Fig. 5, providing priority to TDM data over PKT data in transmitting it to the edge units 22:28-43 to satisfy rigid timing requirements of TDM data 10:1-14).

Cloonan teaches switching matrix as memory-less (memory less switch fabric 6:49-53). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add methods of Han, Miles and Cloonan to the system of Isoyama to increase the capacity of the system, to improve the system operation with delay sensitive TDM traffic by providing a priority for TDM traffic over other traffic and reducing the system delay by utilizing the memory-less switch matrix.

6. Regarding claims 2 and 8, Isoyama teaches the control unit includes an interface to receive data specifying the switch connections for the cells and storing the data (interface of matrix generator 103 on Fig. 3, collecting the requests from all input ports specifying the switch connections 6:16-24 into a request matrix) and storing the data (inherently part of the control unit, because storing the request matrix is essential for the scheduling algorithm performed on the request matrix as shown on Fig. 5 and 6:44-64, where all data of the request matrix is available for the scheduling algorithm).

7. Regarding claims 5 and 11, Isoyama teaches the control unit is arranged in each plurality of arbitration periods (constant time intervals 6:1-10), to determine whether the request include requests compatible with the priority connection unit and if one or more requests are found to control the switching matrix to perform the connection specified by these requests (using priority reservation allocation matrix 35 to mask the request matrix 34 as shown on Fig. 5 and 7:1-20 to generate final allocation matrix 38 that control the switch connections 7:40-50).

8. Claims 3, 4, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isoyama in view of Han, Miles and Cloonan and in further view of Lee (US 6,219,350).

Isoyama in view of Han, Miles and Cloonan teaches all the limitations of parent claims 1 and 7.

Isoyama in view of Han, Miles and Cloonan does not teach a processor in each ingress router to convert TDM traffic into standard cells, a processor with an interface for receiving data specifying how TDM data is converted into cells.

Lee teaches a processor to convert TDM traffic into standard cells (converting device on Fig. 1 to interface both ATM and TDM networks 1:26-60, a processor with an interface for receiving data specifying how TDM data is converted into cells (CLK, Sync-P and Condition signal

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interface on Fig. 1 to generate timing signals by state/timing generating unit 11 controlling TDM frames conversion into ATM cells 1:34-44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add teachings of Lee to each ingress router of the system of Isoyama in view of Han, Miles and Cloonan to improve the system compatibility with TDM equipment by providing a TDM to ATM converter unit synchronized with the system.

*Allowable Subject Matter*

9. Claims 6 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Levitan whose telephone number is (571) 272-3093. The examiner can normally be reached on 8:30 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'DL' followed by a stylized name.

Dmitry Levitan  
Patent Examiner  
05/17/05